THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

URLLC: Some Perspectives from Queueing Theory

By
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Time : **3:30pm – 4:30pm**

Venue : **Rm 833, Ho Sin Hang Engineering Building, CUHK**

Abstract

Ultra-reliable and low-latency communication (URLLC) is a new service category in 5G and beyond to accommodate emerging services and applications, such as autonomous driving, tactile Internet, virtual reality, etc, which have stringent latency and reliability requirements. But, fundamentally, provisioning of reliability and latency is contradicting each other, i.e., normally improving reliability may cause longer delay and shortening delay may harm reliability. How to improve both of them is a big challenge, in particular when the user characteristics and available network resources are stochastic and limited. In this regard, as the theory of dealing with stochastic natures of user behavior and resource availability, queueing theory may provide some hints. In this talk, some perspectives on achieving URLLC inspired by queueing theory will be discussed.

Biography

Zhisheng Niu graduated from Beijing Jiaotong University, China, in 1985, and got his M.E. and D.E. degrees from Toyohashi University of Technology, Japan, in 1989 and 1992, respectively. During 1992-1994, he worked for Fujitsu Laboratories Ltd., Japan, and in 1994 joined with Tsinghua University, Beijing, China, where he is now a professor at the Department of Electronic Engineering. During 1997-1998, he visited Hitachi Central Research Laboratory as a HIVIPS senior researcher. His major research interests include queueing theory and traffic engineering, wireless communications and mobile Internet, vehicular communications and smart networking, and green communication and networks.

Dr. Niu has been serving IEEE Communications Society since 2000, first as Chair of Beijing Chapter and then as Director of Asia-Pacific Board, Director for Conference Publications, Chair of Emerging Technologies Committee, and Director for Online Contents. He has also served as editor of IEEE Wireless Communication, associate Editor-in-Chief of IEEE/CIC joint publication China Communications, and Editor-in-Chief of IEEE Trans. Green Commun. & Networks. He received the Outstanding Young Researcher Award from Natural Science Foundation of China in 2009, Best Paper Awards from IEEE Communication Society Asia-Pacific Board in 2013 and from Journal of Communications and Information Networks (JCIN) in 2019, Distinguished Technical Achievement Recognition Award from IEEE Communications Society Green Communications and Computing Technical Committee in 2018, and Harold Sobol Award for Exemplary Service to Meetings & Conferences from IEEE Communication Society in 2019. He was selected as a distinguished lecturer of IEEE Communication Society as well as IEEE Vehicular Technologies Society. He is a fellow of both IEEE and IEICE.

** ALL ARE WELCOME **

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